

# **The Importance of Applying Authentic Learning in Pre-registration Nursing Education**

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## **Abstract**

This paper explores the significance of authenticity in nursing education and the development of authentic healthcare practitioners. Identifying a current lack of authenticity in the learning materials used in the Transdisciplinary Science module at University of Salford, the authors set out to explore methods that can empower nursing students to bridge the gap between theoretical knowledge and its practical application in clinical settings.

We conducted a literature review that yielded three predominant themes: authentic learning, critical reflection, and supportive nurse educators. Building upon these findings, we investigated how authentic learning can be flawlessly integrated into seminar sessions, utilising the principles of action learning.

As a direct outcome of this study, a robust framework for implementing authentic clinical learning for nursing students has been formulated. This framework empowers students to effectively apply their knowledge in real-world healthcare settings, fostering a deeper understanding that bridges the gap between theory and clinical practice.

## **Key words:**

Authenticity, nursing students, critical reflection, nurse educators, student learning

## **Introduction**

The nature of authentic learning in nursing education involves creating experiences that closely reflect the challenges and difficulties of real clinical settings.

Authentic learning experiences are defined to closely mirror the learning processes observed in real-world settings (Herrington et al., 2014). These experiences have the potential to not only enhance overall engagement and self-efficacy measures but can also play a pivotal role in positively impacting students from underrepresented backgrounds (Chemers et al., 2011).

The integration of authentic learning strategies into nursing education has acquired increasing attention to bridge the gap between theoretical knowledge and clinical practice (Saifan et al., 2021). This is recognised as a problem not just in the United Kingdom (UK) but worldwide.

It is crucial to prepare nursing students to meet the complex challenges they will face in their professional careers. Mueller (2014) and Sivarajah and colleagues (2019) argued that traditional didactic teaching methods have limitations in providing students with a deep understanding of the clinical context and the practical skills required for successful nursing practice. Therefore, by creating a hybrid method of teaching and by implementing authentic learning strategies, this can bridge the gap and foster a more immersive educational experience (Linder, 2017). Authentic practice can essentially engage our nursing students in meaningful, relevant, and real-world learning experiences (Renzulli et al., 2016). Within the UK, student nurses are using a blended approach to study as part of the Nursing and Midwifery Council (NMC), (2018) using the Future Nurse Curriculum (FNC).

Authentic learning is an approach that encourages students to engage in real-world tasks and problem-solving scenarios that mirror the challenges they will

encounter in clinical practice. This methodology allows students to apply their theoretical knowledge, develop critical thinking skills, and gain valuable insights into the complexities of nursing care (Gulikers et al., 2004). By creating an authentic learning environment, Higher Education Institutions (HEIs) can facilitate a smoother transition from the classroom to clinical settings, promoting competence and confidence among our future nurses.

Departing from conventional teaching methods, the approach places students in simulated real-world scenarios, fostering active participation in group sessions, utilising critical thinking, and decision-making. Authentic learning engages students in problem-solving within contexts that closely resemble actual healthcare environments; thereby enhancing their capacity to apply theoretical knowledge to practical situations (Ndawo, 2022). This has been supported by the NMC by introducing up to 600 simulation hours, within the student nurse curriculum (NMC, 2023).

By implementing authentic training in learning, active learning and realism in training can be created. Student nurses can be accustomed to the demands and realities of nursing practice, which is critical to enable 'readiness' for future practice as a professional Registered Nurse (RN) (Amirkhanova et al., 2017). Active learning can also be established within seminar and simulation sessions to allow for active participation throughout. By placing students in scenarios that mimic healthcare environments authentic learning enables their problem solving and decision-making skills.

The concept of authentic learning in nursing education has developed over time in response to the evolving needs and demands of healthcare. There has been a shift in nursing pedagogy as traditional teaching methods often relied on passive learning and didactic instructions. As healthcare became more complex and patient-centred, there was a growing recognition of the need for an alternative approach that actively engaged students in their learning process (Butler and Leahy, 2011). There has also been advancement in simulated technology. High-fidelity patient simulators and other advanced technologies allow for the creation of realistic clinical scenarios. These tools

enable educators to simulate a wide range of clinical scenarios in a safe and controlled environment. In addition, nursing education has emphasised the need for evidence-based practice. Authentic learning aligns with this approach by encouraging students to use critical thinking and research to inform their decisions in scenarios.

At the University of Salford, first-year Bachelor of Science (BSc) NMC (2018) student nurses engage in the Transdisciplinary Science (TDS) module. The TDS module is a vital component of the curriculum, extending into the second and third years of the programme. This module comprehensively covers the anatomy and physiology (A&P) of the human body, tracing its development from pre-conception to the end of life. Additionally, it explores the essential principles of pharmacokinetics and pharmacodynamics. Furthermore, TDS explores the complex interaction between broader determinants of health, illness, and well-being, alongside the biological and psychosocial factors affecting one's health.

The authors have worked closely with the year 1 lecturing team to completely redesign the TDS programme within the last 12 months. We adopted an authentic learning approach with the primary goal of narrowing the gap between theoretical knowledge and its practical application in real-world healthcare settings.

## **Aims and objectives**

The aim of the study is to explore authentic learning in pre-registration nursing education. Therefore, our research question is: 'What is the importance of applying authentic learning in pre-registration nursing education'?

The primary objective of this study is to explore the field of authentic learning within the context of nursing education and interpret how the findings shaped a robust framework.

## Methods

A review of the literature exploring authentic learning within the nursing field was carried out. Using the keywords set out in Table 1., the following databases were used: the British Nursing Index (BNI), Cumulated Index to Nursing and Allied Health Literature (CINAHL) and Cochrane library (see Table 2). Global literature dated within the past 10 years was included in the inclusion criteria (see Table 3).

## Data Extraction

Data was extracted using the template based on the research question. Adhering to the PRISMA guidelines for reporting (Tricco et al., 2018) (see Figure 1.), the review yielded 18 articles, focusing on student nurses and authentic learning (2023, 2 articles; 2021, 5 articles; 2020, 2 articles; 2019, 1 article 2018, 1 article; 2016, 1 article; 2015, 3 articles; 2014, 1 article; and 2013, 2 articles). The articles that were deemed applicable for inclusion were analysed using the Critical Appraisal Skills Programme (CASP) tool (CASP, 2018) as it is recommended for researchers for quality appraisal, according to Noyes and colleagues (2018) and Higgins and Green (2008). Furthermore, a table of the 18 studies included in the review were explored and themes were identified after exploration (see Appendix 1).

Data was synthesised using a thematic analysis. The following key themes emerged from the review: 'authentic learning', 'critical reflection', and 'supportive nurse educators'.

Table 1 (below). Key words used for the literature review:

<b>Key words</b>	<b>BNI</b>	<b>CINAHL</b>	<b>Cochrane</b>
Authentic Learning	8998	310	1
Nursing	912409	750,788	667
Student nurses	114264	33,026	12
Transdisciplinary Science	2638	69	14
Anatomy and Physiology	14,076	25	7
A&P	24536	11,323	186
Structured template	2077	223	3

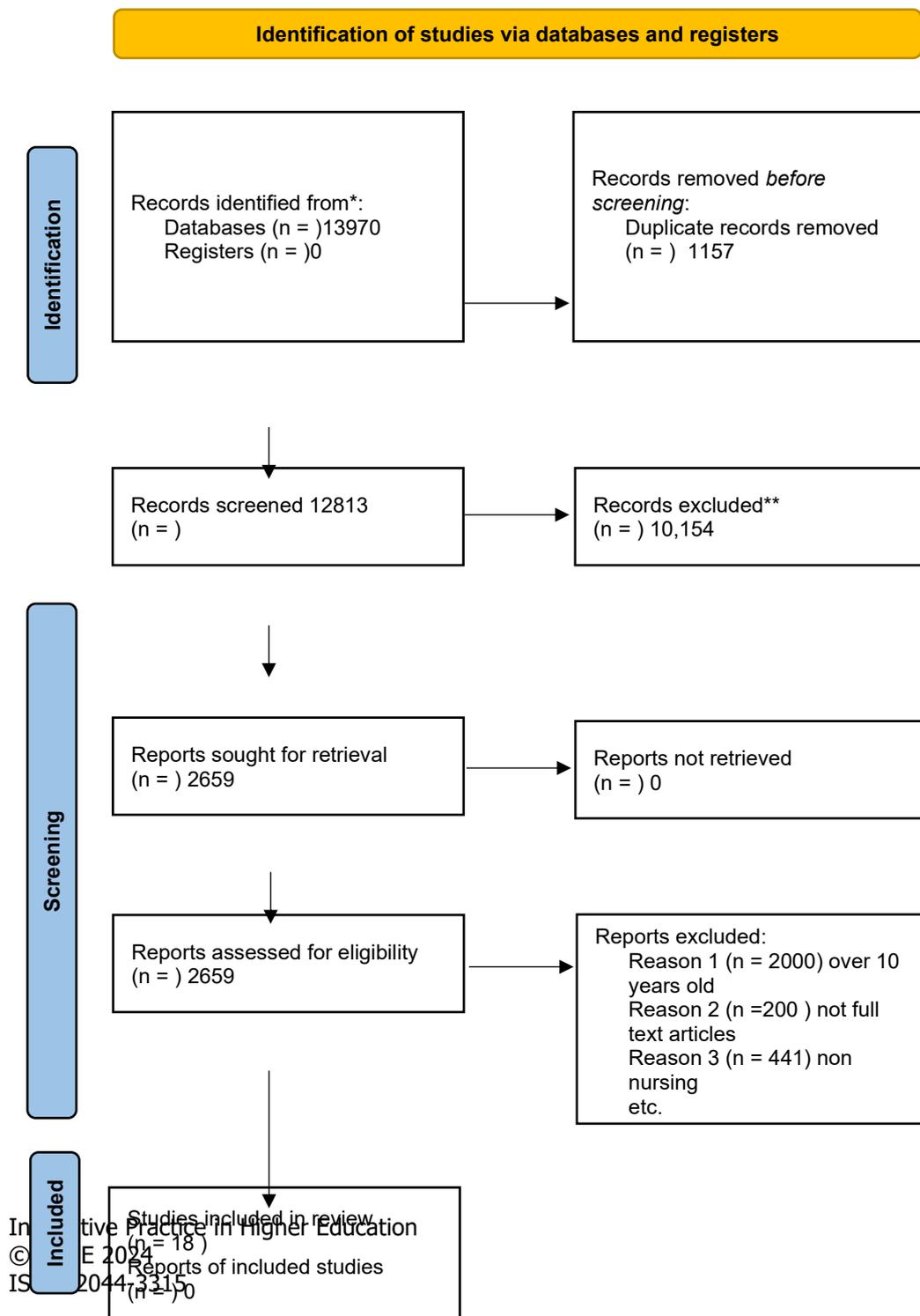
Table 2 (below). Summary of database search:

<b>Advance search</b>	<b>BNI</b>	<b>CINAHL</b>	<b>Cochrane</b>
Authentic learning AND Nursing OR Student nursing AND Transdisciplinary Science AND Anatomy and Physiology OR A&P AND Structured Template	1362	57	12

Table 3 (below). Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
In last 10 years (2013-2023)	Older than 10 years
Full text articles only	Not full text articles
Articles that explore authenticity	Articles not containing authenticity

Figure 1. PRISMA flow diagram (PRISMA, 2023)



## Discussion

Using a narrative review of the structured literature, the researchers were able to consider the theoretical viewpoint on the intended research question (Bernardo et al., 2004) using key themes extracted from the literature review: 'authentic learning', 'critical reflection', and 'supportive nurse educators'.

## Authentic Learning

Carless-Kane and Nowell's (2023) integrative review unveiled insightful findings from a compilation of studies. Among the studies included, 21% of them demonstrated a significant trend: the incorporation of clinical-based concepts, such as health assessment, into theory courses, facilitated a noteworthy linkage between theoretical knowledge and its practical application in clinical courses. Fell et al. (2016) highlighted that students exhibited a heightened ability to recognize connections between theory and practice when classroom knowledge was intertwined with clinical practice scenarios. Parallel research by Molesworth and Lewitt (2015), Karstadt et al. (2018), and Morgan (2006) corroborated these findings, emphasizing that when students were adept at forging links between theoretical principles and clinical concepts within their theory courses, they were better prepared to transfer these connections into the realm of clinical practice. Furthermore, Valen et al. (2019) made a notable contribution by shedding light on how similar connections established during simulated laboratory sessions served as a foundational reference point for students.

Similarly, Maude et al.'s (2021) integrative review strongly supports the argument for a thorough reconceptualization of authentic assessment. To be truly authentic, this phenomenon demands clear definition, and it necessitates active student engagement with learning at its core, aligning seamlessly with the desired assessment outcomes. Vu and Dall'Alba (2014) go a step further by advocating for the integration of the human element into practical scenarios, emphasizing that any call for learning and assessment to attain

authenticity falls short if it remains centred solely on skill acquisition without encompassing the entirety of nursing practice. These findings prompt reflection on the fundamental components of authentic nursing assessment.

Furthermore, Macdiarmid et al. (2021) employed a design method approach to create an authentic learning experience tailored for graduate entry nursing students in New Zealand. This approach is grounded in what can be termed 'ontological pedagogy,' which places paramount focus on the transformative process of students evolving into professionals, as opposed to merely delivering a predetermined set of content knowledge (Barnett, 2012).

Jowsey et al.'s (2020) scoping review focused on blended learning in pre-registration nursing education, specifically through distance education. It emphasized that the creation of a learning environment should be both purposeful and well-designed. Such an approach is essential for effectively stimulating learning and preparing undergraduate nurses adequately for their clinical practice.

Additionally, Weeks et al. (2019) conducted a comprehensive review that delved into the intricacies of developing and integrating nursing competence through authentic technology-enhanced clinical simulation education. Their study focused on innovative pedagogies designed to bridge the theory-practice gap effectively. Their investigation revealed that the clinical simulation education model draws inspiration from the adaptation of Gulikers et al.'s (2004) five-dimensional framework for authentic learning and assessment. They strongly endorse the implementation of situated learning approaches that utilise authentic simulated clinical scenarios in conjunction with competence-based activities. These strategies mirror the demands of real-world clinical problem-solving scenarios; aligning education with practical experience seamlessly.

In a quasi-experimental study conducted by Chong et al. (2016), the enhancement of learning domains among nursing students was explored through the application of authentic assessment pedagogy in clinical practice.

The research substantiates that authentic assessment pedagogy plays a pivotal role in clarifying students' learning expectations. It further motivates them to concentrate on both their present and future performances, thereby cultivating a sense of responsibility for their own learning journey. Similarly, Yoo et al. (2015) examined an enlightening quasi-experimental study that focused on the effects of case-based learning on communication skills, problem-solving ability, and learning motivation in nursing students. The study utilised tangible and realistic cases, thoughtfully selected to be directly applicable to the clinical environment. This strategic choice not only strengthened participants' motivation to learn but also enhanced the overall relevance and effectiveness of the learning experience.

Also, Hansen and Bratt (2015) examined the process of acquiring skills through Simulated Learning Experiences (SLEs) in their concept analysis. Within the scope of SLEs, certain key characteristics come to the forefront. First and foremost, the simulation environment must be meticulously structured (as advocated by Bensfield et al., 2012 and Scherer, Bruce, & Runkawatt, 2007) and effectively controlled.

Hewitt et al. (2015) conducted a qualitative study aimed at investigating an educational intervention designed to enhance nursing students' comprehension of medication safety. To address this challenge, the researchers conceived a novel approach: the creation of concise digital recordings depicting real-life medication error scenarios rooted in system-based errors. Notably, these recordings offered a visual demonstration of the impact of system factors. This approach eliminated the need for students to solely depend on personal experience to grasp the complexity of such influential factors.

In a cross-sectional survey conducted among undergraduate nursing students at an Indonesian nursing school, Rochmawati et al. (2014) discovered that the implementation of problem-based learning greatly facilitates students in integrating and efficiently utilising the available learning resources. This approach enhances their overall learning experience. Furthermore, the choice

of assessment methods can significantly influence students' learning approaches. Authentic forms of assessment, as indicated by Gulikers et al. (2006), tend to encourage deeper levels of learning. It is worth noting that, despite the Indonesian nursing school's reliance on multiple-choice questions for student assessments, the study points out that there has been no evaluation of the quality of these assessments, therefore multiple choice questions would not be a robust strategy to rely on substantively. This situation has the potential to influence the adoption of various learning approaches, prompting a reconsideration of assessment strategies and their impact on student learning.

In a longitudinal study by Macdonald et al. (2013), the primary emphasis was on the role of authentic learning and diagnostic assessment environments. In this study, students were intentionally immersed in settings that closely mirrored real-world scenarios, thus enhancing their ability to grasp the authentic nature of the challenges presented. This immersive experience facilitated a deeper understanding of the tasks at hand and contributed to a more accurate problem-solving process.

The use of authentic strategies in nursing education programs is therefore crucial because it bridges the gap between theoretical knowledge and practical application. It allows students to experience real-life healthcare situations, preparing them to handle complex clinical challenges with confidence. Authentic learning promotes critical thinking, problem-solving skills, and a deep understanding of the healthcare environment, ultimately producing more competent and capable nurses.

## **Critical Reflection**

Carless-Kane and Nowell's (2023) integrative review yielded significant insights from a selection of studies. Notably, five of these studies (21%) stressed the valuable role of reflective practice in bridging the gap between theoretical learning and its practical application (Byermoen et al., 2023;

Johnston et al., 2019; Khoiriyati and Sari, 2021; Nash and Harvey, 2017). Khoiriyati and Sari (2021) observed that the application of reflective thinking allowed students to discern connections between their theoretical knowledge and the real-world clinical environment. This connection, in turn, empowered students to craft customised care plans to meet the unique needs of individual patients. Furthermore, Nash and Harvey (2017) found that reflection enhanced students' ability to critically analyse patient care interventions and make informed decisions about the subsequent steps in the nursing process. In essence, these findings emphasize the pivotal role of reflective practice in enhancing both the quality-of-care planning and the development of students' critical thinking skills.

Palsson et al.'s (2021) qualitative observational study, which examined the collaboration of first year nursing students using peer learning during clinical practice education, highlighted a self-directed learning theme consistent with the concept analysis conducted by Froneman et al. (2023) who gave insight into the nature of reflective practices as a teaching and learning strategy. They found that while these practices hold immense value, they can however be perceived as challenging and time-consuming by nurse educators, who already face the demanding juggle of teaching, clinical supervision, and research (Taylor-Haslip, 2013).

In essence, reflection serves as a vital tool for nursing students to revisit previously acquired knowledge, delve deeper into their understanding, and reconsider their experiences in a bid to enhance their practice and broaden their perspectives (Bulman et al., 2012; Chang, 2019). The culmination of this analysis reveals the core concept of facilitating presence through guided reflection for transformative learning, comprising three interconnected elements: facilitating presence (the aim or purpose), guided reflection (the method for achieving it), and transformative learning (the intended outcome) (Froneman et al, 2023).

A cluster randomised controlled trial conducted by Yu et al. (2021) revealed a notable divergence in the enhancement of critical thinking self-confidence

within the experimental class, as opposed to the control class. Nevertheless, no statistically significant disparities were observed in other critical thinking-related variables between the two groups, both prior to and after the course. It is worth noting that there was a modest improvement in critical thinking ability in both classes. These outcomes suggest that blended case-centred learning demonstrates possibilities in supporting students' academic performance.

Additionally, Macdiarmid et al. (2021) also advocate for the value of critical reflection. In their design-based approach, they implement a structure involving weekly short formative assessments throughout the semester. In these assessments, students are encouraged to share evidence-informed reflections on how the course content could be effectively applied to enhance the care provided to the patients being discussed.

Critical thinking takes centre stage in the qualitative study conducted by Pivac et al. (2021). Participants in this study emphasized the positive impact of innovative methods within a simulation environment, attributing them to the stimulation of students' critical thinking, motivation, the development of self-confidence, and the promotion of problem-based learning. Emphasizing the link between emotional intelligence and critical thinking in nursing education, Christianson (2020) stresses the significant role that emotions play in nurturing critical thinking skills. Additionally, a study by Kanbay and Okanlı (2017) offered empirical evidence that education aimed at enhancing critical thinking leads to improvements in problem-solving skills. These findings collectively call attention to the role of critical thinking in nursing education.

In a qualitative observational study conducted by Ylya et al. (2021), the importance of reflection and the utilization of patient cases as effective tools for acquiring experience-based knowledge and promoting practical learning is emphasized, echoing the thoughts of Miraglia and Asselin (2015). It has been noted that nursing students often face challenges in finding sufficient time for sharing and discussing their experiences during clinical practice. This aspect is

crucial for students to make sense of what they are learning, as highlighted by Newton et al. (2010).

Spies and Botma (2020) argue that the implementation of reflection and experiential learning, as evident in their action research, is influential in effectively managing cognitive load and enhancing constructivist learning. To achieve these goals, they advocate for the development of scenarios that progressively increase in complexity, rather than presenting overly challenging situations right from the outset. Their argument finds support in the idea that students' perception of the realism of the simulation significantly influences their engagement and overall experience, as posited by research conducted by Berragan (2011) and Johannesson et al. (2013).

Arguably, Weeks et al. (2019) explore that the act of reflecting on the learning experience constitutes a fundamental and recurring practice in both clinical and simulated clinical environments following simulations or clinical events. They contend that this practice is not only common but also necessary within the realm of nursing education, providing a compelling argument for its incorporation into the curriculum.

Haukedal et al. (2018) highlighted the significance of repetition in their quasi-experimental study, recommending it as a best practice in learning. In a similar vein, Marton (2006) argues that students should not only encounter similarities but also differences in their learning experiences, as this exposure helps them connect knowledge to different situations.

To integrate critical thinking and reflection in the nursing programme, the researchers have utilised the evidence to support the action learning approach and embedded self-directed workbooks for students. The self-directed approach will therefore enable students to reflect on their learning and experience to support their overall self-critical reflection (Kolb, 1984).

## **Supportive Nurse Educators**

In Carless-Kane and Nowell's (2023) integrative review, a significant trend emerged. Nine studies (comprising 38%) consistently indicated that students' capacity to apply their learning in clinical practice was markedly enhanced when they perceived the support of knowledgeable and approachable nursing instructors and professional staff. These studies, conducted by Bassah et al. (2016), Byermoen et al. (2021), Ewertsson et al. (2017), Fell et al. (2016), Honey and Lim (2008), LoVerde et al. (2021), Moloney et al. (2020), Newton et al. (2010), and Tsai and Tsai (2005), collectively affirm this finding. Of particular note, within these nine studies, Byermoen et al. (2021), Bassah et al. (2016), and Newton et al. (2010) reported that when nursing students received support from knowledgeable clinical instructors, they exhibited greater confidence in establishing connections between classroom knowledge and their prior learning experiences.

Commencing with the concept analysis, Froneman et al. (2023) highlight the essential role of nurse educators. They stress the importance of not only conveying the significance of presence to nursing students but also actively facilitating methods for students to attain a state of presence, even under challenging circumstances. As articulated by VanKuiken et al. (2017) and McMahon and Christopher (2011), it is crucial for nurse educators to introduce strategies right from the outset of the nursing program. These strategies serve to instil in students the essential value of being fully present with their patients throughout their clinical experiences.

In the qualitative study by Pivac et al. (2021), it is emphasized that a strong rapport between nurse educators and students produces favourable outcomes in student education, while also adopting motivation for their future work in clinical settings.

Also, In the scoping review by Jowsey et al. (2020), they stress the importance of purposeful and well-designed learning environments in the education of undergraduate nurses. They also emphasize that such

environments are essential for effectively promoting learning and adequately preparing students for clinical practice. Effective communication within these environments not only optimizes relationships between students and staff but also enhances student satisfaction.

Furthermore, the review by Weeks et al. (2019) contended that the NMC Future Nurse Curriculum standards will present challenges for clinical mentors and educators who assist students in achieving competence growth, integration, and boundary-crossing in the context of professional nursing practise.

Likewise, Chong et al. (2016) provide support for the importance of nurturing supportive nursing educators. Their research underscores the critical role played by these educators in fostering the acquisition of essential knowledge and skills among students. This nurturing, they contend, is essential for students to become safe practitioners and adept critical thinkers when delivering patient care.

From the synthesised evidence, it is evidence that students can excel in their studies with support from their educators. Therefore, to incorporate this approach, the researchers have planned weekly drop-in sessions for students to allow continuous supportive measures to be in place.

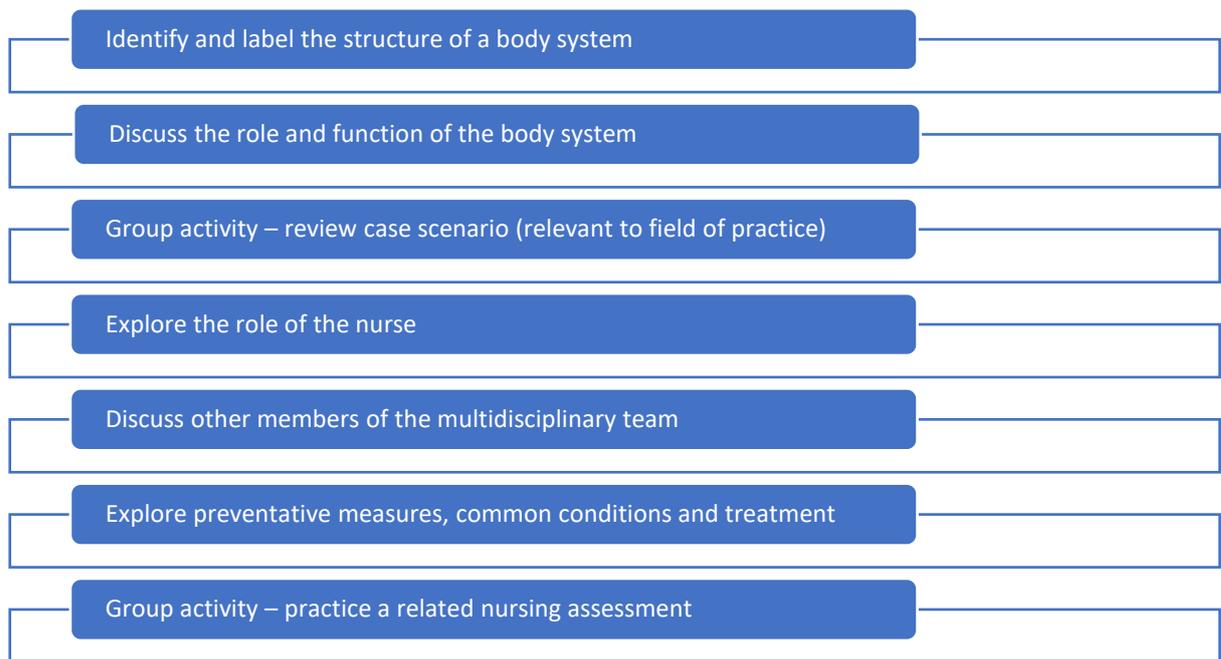
## **Development of framework**

To align with the learning outcomes of the Nursing and Midwifery Council (NMC) (2018), Future Nurse Curriculum (FNC) programme requirement syllabus, the researchers acknowledged the foundation of the FNC programme is underpinned by Blooms taxonomy of active learning (Ruh, 2023) and Benner's Framework pedagogies (Ozdemir, 2019). Utilising the evidence-based literature from the key themes of the systematic review, the researchers therefore integrated learning to deliver teaching constructively and implement innovative practice within Higher Education (HE).

The researchers reviewed: the feedback from students and faculty colleagues, the module specification, learning objectives for the module and the NMC Standards. From this, we developed a structured template framework for lectures and seminars, implementing a standardised approach. Within the template framework, we applied the key themes from the literature review to design activities, resembling real-world activities that bridges the gap between theoretical and clinical practice, therefore preparing student nurses for future nursing workforce (Parker and Grech, 2018).

Within the seminar sessions, particular emphasis was placed on reinforcing the understanding of the body system in focus. This process was initiated by revisiting the systems' structure and labelling its various components. Simultaneously, reviews of the key concepts presented in the lectures were conducted, facilitating the consolidation of students' learning, and deepening their comprehension (Biggs and Tang, 2011).

Figure 2 (below): Authentic Seminar Template Framework.



The analysis was extended into the anatomy and physiology of the system, emphasizing the terminology used in clinical practice, particularly what students might encounter during their placements and how it could impact patients or service users. Throughout this period, the partnership between lecturers and students comprehensively covered all aspects of the body system in the context of the human life cycle, from pre-conception to death. Various assessment tools and investigations used to assess patients or service users were recognised further, highlighting both normal and abnormal results along with potential implications. This process effectively bridged theory and practice, encompassing adult, children and young people (CYP), Mental Health, and Learning Disability Nursing. Moreover, it introduced other healthcare professionals as part of the multidisciplinary team, elucidating their roles and responsibilities and their influence on patient care in clinical settings, whether in a hospital or community setting.

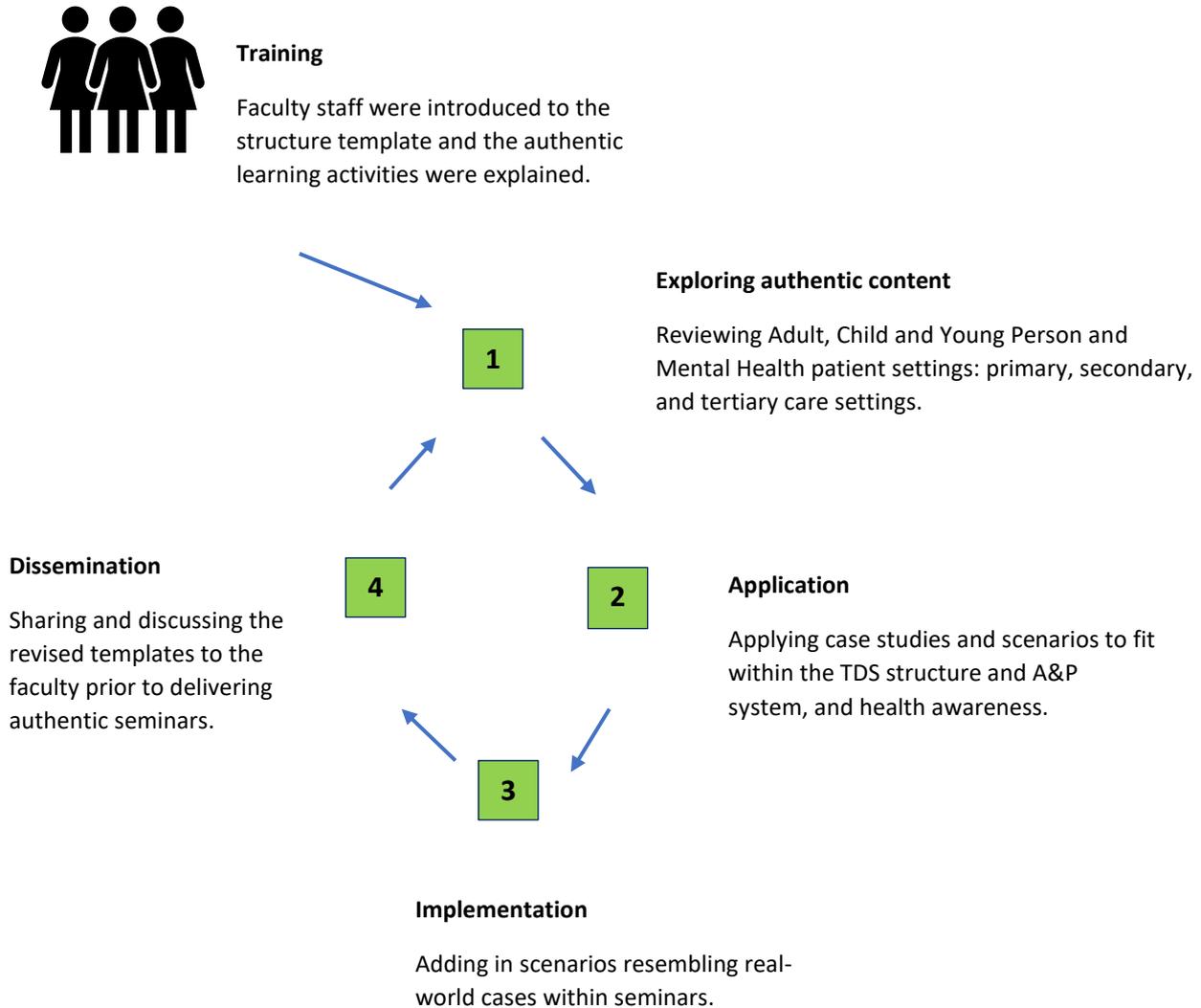
In addition to subjects such as health inequalities, pharmacokinetics, and public health, the analysis delved into their impact on the human body both individually and holistically. Students now learn about the involvement of

various members of the multidisciplinary team in patient care while engaging in the new authentic framework of physical activities, aligning with the arguments put forth by Hwang et al. (2023). This facilitated the crucial link between theory and practice.

The researchers collaborated with skills tutors to align the TDS session with the subsequent student skills session, allowing students to consolidate their learning, and practice the relevant skills in a simulated environment. This approach ensured that students acquired the necessary foundational knowledge of TDS before engaging in skill sessions and further reinforced the connection between theory and clinical practice.

The new structure was presented to the faculty staff through training sessions, including discussions on the introduction of authentic learning activities (see Figure 3 below). After reviewing all fields of practice patient settings in primary, secondary, and tertiary care, the authors integrated case studies and scenarios into the TDS structure, focusing on A&P systems and health promotion and awareness. Following implementation, the revised framework templates were shared with the faculty for further considerations before full implementation in student sessions.

Figure 3 (below): The design of authentic learning within TDS module



It is worth noting that this is the first formal implementation of this approach, and we intend to evaluate its effectiveness after the first cohort completes the module. The evaluation will involve gathering student feedback through questionnaires and conducting focus groups with both the current cohort and the previous one. These assessments will provide a detailed analysis of the new approach's impact and ascertain whether it has maintained or potentially improved the quality of TDS, informing future adjustments.

## **Conclusion**

In summary, a structured literature review with a narrative approach was conducted around the key themes to support the action learning concept for incorporating authentic learning into the NMC FNC.

One of the key themes explored was 'authentic learning' and this helped the researchers shape the learning of the delivery of content to align with real world applications to resemble clinical practice. Another key theme was 'critical reflection' whereby learning was experienced through self-critical reflection and this shaped the delivery of self-directed workbooks to enable self-reflection to occur. The final key theme identified was 'supportive nurse educators' and this was implemented into the module through weekly drop-in sessions for continuous supportive measures.

After aligning the key concepts arising from the aforementioned themes, data was synthesised and the framework for authentic learning was developed.

The researchers acknowledge that further evaluation of the robust framework is required to embed improvements and improve student experience for future intakes and this process could be conducted through student evaluations of the module. The study concludes that, implementing authentic learning in pre-registration nurse education can have a positive impact on the applicability of future authentic practitioners as it helps to bridge the gap between theoretical context and clinical practice.

## **Disclosure statement**

All materials included in the article represent the authors' own work and anything cited or paraphrased within the text is included in the reference list. This work has not been previously published nor is it being considered for publication elsewhere. There are no conflicts of interest.

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## Appendices

Appendix 1 – Table of summary of findings and key themes.

No.	Author / Year	Title	Themes / Subthemes
1	Carless-Kane, Sandra; Nowell, Lorelli / Aug 2023	Nursing students learning transfer from classroom to clinical practice: An integrative review	Supportive Nursing Educators,  Aligning theory to Practice,  Lack of Real-world Applicability  Inconsistency between classroom course content and clinical practice  Fostering Reflection
2	Froneman, Kathleen ; Emmerentia du Plessis ; Anneke Catherina van Graan / May 2023	A concept analysis of facilitating presence through guided reflection for transformative learning in nursing education	Critical reflection on experiences  Deep and constructive learning  Nurse Educator support through active listening and connection  Nursing student's ability to learn
3	Yu, Zhenzhen; Hu, Rong; Shen, Ling;	Effects of blended versus offline case-	Critical thinking

	Zhuang, Jiayuan; Chen, Yimin; Chen, Meijing; Lin, Yazhu / May 2021	centred learning on the academic performance and critical thinking ability of undergraduate nursing students: A cluster randomised controlled trial	Self- confidence  Blended learning  Offline case-centred learning
4	Maude, Phil ; Livesay, Karen ; Searby, Adam ; McCauley, Kay / Mar 2021	Identification of authentic assessment in nursing curricula: An integrative review	Clinical Practice: rubric assessment and portfolios  Self-Assessment: collaborative work and case scenarios  Simulation: Virtual environments, problem solving and mobile devices
5	Macdiarmid, Rachel ; Winnington, Rhona ; Cochrane, Thomas ; Merrick, Eamon / Feb 2021	Using educational design research to develop authentic learning for graduate entry nursing students in New Zealand	Problem based learning  Critical thinking  Authentic learning environment
6	Pivač, Sanela; Skela-Savič, Brigita; Jović, Duška; Avdić, Mediha;	Implementation of active learning methods by nurse educators in	Critical thinking and reflection

	Kalender-Smajlović, Sedina / 2021	undergraduate nursing students' programs – a group interview	Quality and Active teaching methods  Student-centred teaching  Nurse educators knowledge
7	Ylva Pålsson, Gunilla Mårtensson, Christine Leo Swenne, Ester Mogensen and Maria Engström / Jan 2021	First-year nursing students' collaboration using peer learning during clinical practice education: An observational study	Life- long learners  Reflection  Peer-to-peer education  Nurse leadership
8	Spies, Cynthia; Botma, Yvonne / Aug 2020	Optimising simulation learning experiences for mature, postgraduate nursing students	Simulation learning experience.  Continuous reflection Student performance
9	Tanisha Jowsey, Gail Foster, Pauline Cooper- Ioelu, Stephen Jacobs, / Mar 2020	Blended learning via distance in pre- registration nursing education: A scoping review	Active learning: Familiarity and confidence with blended learning  Technological barriers: challenges with information technology  Support: motivation and stress

			Communication
10	Weeks, Keith W; Coben, Diana ; O'Neill, David ; Jones, Alan ; Weeks, Alex ; Brown, Matt ; Pontin, David / May 2019	Developing and integrating nursing competence through authentic technology-enhanced clinical simulation education: Pedagogies for reconceptualising the theory-practice gap	Reflection on learning experience Authentic assessment Active supported engagement
11	Thor Arne Haukedal ; Inger Åse Reiersen ; Hedeman, Hanne ; Ida Torunn Bjørk / 2018	The impact of a New Pedagogical Intervention on Nursing Students' Knowledge Acquisition in Simulation-Based Learning: A Quasi-Experimental Study	Theoretical knowledge Simulation, debriefing Cognitive learning Reflection
12	Chong, Edmund Jun Meng; Lim, Jessica Shih Wei; Liu, Yuchan; Lau, Yvonne Yen Lin; Wu, Vivien Xi / Sep 2016	Improvement of learning domains of nursing students with the use of authentic assessment pedagogy in clinical practice	Continuous learning Authentic Assessment pedagogy Cognitive understanding Psychomotor skills

			Critical thinking and reflection
13	Yoo, Moon-Sook; Park, Hyung-Ran, Jun 2015	Effects of case-based learning on communication skills, problem-solving ability, and learning motivation in nursing students	Problem solving ability  Learning motivation  Communication skills
14	Hansen, Jamie; Bratt, Marilyn/ 2015	Competence Acquisition Using Simulated Learning Experiences: A Concept Analysis	Authentic environment  High fidelity simulation  Demonstration: demonstrate proficiency, competence, and clinical judgment  Simulated learning experiences.
15	Hewitt, Jayne; Tower, Marion; Latimer, Sharon / Jan 2015	An education intervention to improve nursing students' understanding of medication safety  f	Real-Life scenarios  Digital recordings based on real life experiences. Communication and collaborative practice-ready  Support from nursing faculty

16	Rochmawati, Erna; Rahayu, Gandes Retno; Kumara, Amitya/ Nov 2014	Educational environment and approaches to learning of undergraduate nursing students in an Indonesian School of Nursing	Content curriculum and teaching methods  Educational environment  Problem based learning
17	Clark, Carey S, AHN-BC, RYT/ 2013	Resistance to Change in the Nursing Profession: Creative Transdisciplinary Solutions	Resistance to change in nursing academia  Reflective process
18	Macdonald, Kevin; Weeks, Keith W; Moseley, Laurie / Mar 2013	Safety in numbers 6: Tracking pre- registration nursing students' cognitive and functional competence development in medication dosage calculation problem- solving: The role of authentic learning and diagnostic assessment environments.	Baseline knowledge  Authentic learning  Virtual presentation of real world features

